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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,062	08/18/2003	John R. Richards	4094-009	4152
24112	7590	11/07/2006		EXAMINER
COATS & BENNETT, PLLC				WONG, EDNA
P O BOX 5			ART UNIT	PAPER NUMBER
RALEIGH, NC 27602			1753	

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/643,062	RICHARDS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Edna Wong	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 19 October 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 3,7-9,19,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 9 and 23 is/are rejected.
- 7) Claim(s) 3,7,8,19 and 22 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

This is in response to the Amendment dated October 19, 2006. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Arguments***

#### **Claim Objections**

Claims 20 and 22 have been objected to because of minor informalities.

The objection of claims 20 and 22 has been withdrawn in view of Applicants' amendment.

#### **Claim Rejections - 35 USC § 112**

I. Claim 23 has been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The rejection of claim 23 under 35 U.S.C. 112, first paragraph, has been withdrawn in view of Applicants' amendment.

II. Claims 3, 7-9, 19 and 22-23 have been rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for irradiating with UV light,

does not reasonably provide enablement for irradiating with microwave energy. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The rejection of claims 3, 7-9, 19 and 22-23 under 35 U.S.C. 112, first paragraph, has been withdrawn in view of Applicants' amendment.

**III.** Claims 3, 7-9 and 19-23 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 3, 7-9 and 19-23 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

**IV.** Claim 9 has been rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

The rejection of claim 9 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 103

**I.** ~~Claims 12-18 and 20~~ have been rejected under 35 U.S.C. 103(a) as being

unpatentable over **Kupper et al.** (US Patent No. 5,219,544) in combination with **Stevens** (US Patent No. 4,416,748).

The rejection of claims 12-18 and 20 under 35 U.S.C. 103(a) as being unpatentable over Kupper et al. in combination with Stevens has been withdrawn in view of Applicants' amendment. Claims 12-18 and 20 have been cancelled.

II. Claim 21 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Kupper et al.** (US Patent No. 5,219,544) in combination with **Stevens** (US Patent No. 4,416,748) as applied to claims 12-18 and 20 above, and further in view of Applicants' Admitted Prior Art (Specification, page 2, line 12 to page 3, line 5).

The rejection of claim 21 under 35 U.S.C. 103(a) as being unpatentable over Kupper et al. in combination with Stevens as applied to claims 12-18 and 20 above, and further in view of Applicants' Admitted Prior Art has been withdrawn in view of Applicants' amendment. Claim 21 has been cancelled.

#### ***Response to Amendment***

#### ***Claim Objections***

Claim 19 is objected to because of the following informalities:

#### **Claim 19**

line 8, it is suggested that -- (NO<sub>2</sub>) -- be inserted after the word "dioxide". See claim 23, line 2.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

I. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

**Claim 9**

lines 2-5, recites “wherein the step of irradiating the gas stream with UV light includes providing a two stage irradiation process where one irradiation stage is employed prior to filtering the particulate matter and the second irradiation stage is employed after filtering the particulate matter”.

This claim limitation was not described in the specification in such a way as to reasonably convey to one skilled in the art that the Applicants, at the time the application was filed, had possession of the claimed invention.

II. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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**Claim 23**

line 3, "the NO concentration" lacks antecedent basis.

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

Claims 3, 7-9, 19 and 22-23 define over the prior art of record because the prior art does not teach or suggest a method of removing ammonia from an effluent gas stream comprising the steps of (a) irradiating, (b) substantially reducing, (c) initiating and (d) maintaining as presently claimed, esp., the steps of (a) irradiating with ultraviolet light a gas stream produced by an industrial process where the gas stream emitted from the industrial process contains ammonia at concentrations less than 40 ppm; and (d) maintaining a NO<sub>x</sub> concentration in the gas stream at a concentration level sufficient to maintain in the gas stream the active set of hydroxyl and hydroperoxy free radical reactions. The prior art does not contain any language that teaches or suggests the above. Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a *prima facie* case of obviousness cannot be established.

Claim 19 would be allowable if rewritten or amended to overcome the claim objection(s) set forth in this Office action.

Claim 9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 1<sup>st</sup> paragraph, set forth in this Office action.

Claim 23 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in this Office action.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

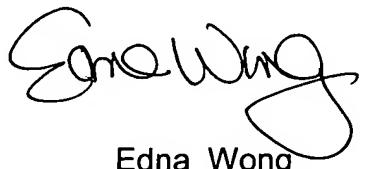
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
November 2, 2006